

Agilent Ref: 10020208-1
United States Application Serial No. 10/087,447

AMENDMENTS

Please incorporate the amendments below into the above-referenced application.

In the Claims:

1. (Original) A method of interrogating an addressable array unit having a transparent substrate with a back surface, and an array with a plurality of different chemical features on a front surface, the method comprising:
 - (a) illuminating the features while the array is dry, with an interrogating light which is directed through the substrate from the back surface and onto the chemical features on the front surface; and
 - (b) detecting light emitted from respective features in response to the interrogating light, which detected light has passed from the front surface, through the substrate and out the back surface;
wherein the light is emitted from locations of the features which are spaced from the front surface a distance of less than one-eighth of the wavelength of the illuminating light in a gas or a vacuum which is in contact with the dry array.
2. (Original) A method according to claim 1 wherein the light emitting locations of the chemical features are spaced from the front surface a distance of less than one-tenth of the wavelength of the illuminating light.
3. (Original) A method according to claim 1 wherein the light emitting locations of the chemical features are spaced from the front surface a distance of less than one-twentieth of the wavelength of the illuminating light.
4. (Original) A method according to claim 1 wherein the light emitting locations of the chemical features are spaced from the front surface a distance of less than one-fiftieth of the wavelength of the illuminating light.
5. (Original) A method according to claim 1 wherein the interrogating light is

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directed toward the back surface at an angle of between 0 and 45 degrees to a normal to the back surface.

6. (Original) A method according to claim 5 wherein the angle is less than 25 degrees.

7. (Original) A method according to claim 5 wherein the angle is less than 10 degrees.

8. (Original) A method according to claim 1 wherein the chemical features are polynucleotides.

9. (Original) A method according to claim 1 wherein the chemical features are amino acid polymers.

10. (Original) A method of interrogating an addressable array unit having a transparent substrate with a back surface, and an array with a plurality of different chemical features on a front surface, the method comprising:

(a) illuminating the features while the array is dry, with an interrogating light which is directed through the substrate from the back surface and onto the chemical features on the front surface; and

(b) detecting light emitted from respective features in response to the interrogating light, which detected light has passed from the front surface, through the substrate and out the back surface;

wherein the light is emitted from locations of the features which are spaced from the front surface a distance of less than one-eighth of the wavelength of the emitted light in a gas or a vacuum which is in contact with the dry array.

11. (Original) A method according to claim 10 wherein the light is emitted from locations of the features which are spaced from the front surface a distance of less than one-tenth of the emitted light wavelength.

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12. (Original) A method according to claim 10 wherein the light is emitted from locations of the features which are spaced from the front surface a distance of less than one-fiftieth of the emitted light wavelength.

Claims 13-18 (Canceled)

19. (Original) A method according to claim 1 additionally comprising, prior to the illuminating and detecting:

exposing the array to a sample in a liquid; and
washing and drying the array.

Claims 20-24 (Canceled).